

Review Comments
Terminal 4 Source Control Decision Support
Data Collection Spring 2015 Interim Report
Dated: September, 2015

Following are the U.S. Environmental Protection Agency's (EPA's) comments on the September, 2015 document titled "*Terminal 4 Source Control Decision Support Data Collection Spring 2015 Interim Report*" (Interim Report) prepared by Geosyntec Consultants (Geosyntec) on behalf of the Port of Portland (Port). The Interim Report presents the preliminary data results associated with the *Final Terminal 4 Source Control Decision Support Data Collection Work Plan for Slips 1 and 3 Upland Facilities* (Work Plan; Geosyntec, 2015), and discusses the additional data collection efforts planned for the 2015/2016 wet season to complete activities included in the Work Plan.

The Oregon Department of Environmental Quality (DEQ) submitted comments on the Interim Report to the Port in an email dated October 12, 2015. The Port subsequently submitted a letter to DEQ dated October 20, 2015 which provides responses to DEQ comments and an updated schedule for completing the Work Plan. EPA's comments focus on the Port's response to DEQ comments and the proposed actions for completing the Work Plan during the 2015-2016 wet season.

1. **DEQ Comment:** The delay in obtaining the ZPG media and resulting inability to collect treated composite storm water samples from Basins L and M (i.e., during the first sampling interval) contributed, in part, to the identified data gaps. Considering that rain events have been infrequent in 2015 and that data collected to date have been from storm events in midseason or late in the season, Geosyntec and the Port are encouraged to ensure that all necessary preparations have been made prior to the onset of the first rains.

Port Response: Necessary preparations for the fall 2015 stormwater sampling at T4 have been made and the first sampling of a JSCS qualifying event was completed on 10/10/2015 for Basin K. ZPG media was obtained and has been installed in the treatability columns. Both media treated and untreated composite stormwater samples are now being collected.

EPA Response: It is important to collect paired samples that represent raw and treated stormwater from both Basins L and M. Now that sampling has been initiated, Geosyntec should monitor the sampling equipment as closely as possible to identify and rectify problems as they occur. If sampling issues occur, the entire sampling interval may need to be reinitiated so that collected samples are representative and comparable.

2. **DEQ Comment:** In light of the fact that 20 µm filtration of the sample from Basin M (and to a lesser degree from Basin L) during the first sampling interval resulted in a relatively minor decrease in PAH levels, the inclusion of a 5 µm bag filter along a separate path in the sampling train might provide an additional source of data concerning PAH occurrence in particle size bins beyond 20 µm and 0.45 µm. Are there any contingency plans to collect storm water samples downstream of the 5 µm bag filter if necessary?

Port Response: Collecting samples downstream of the 5 µm bag would require additional

equipment and modification to the current sampling apparatus. However, additional filtration of composite water quality samples can be conducted by the laboratory using a 5 µm filter to obtain this additional information on PAH association to small particle sizes. This additional analysis will be included for the stormwater composite samples collected.

EPA Response: EPA agrees with the Port's approach; additional filtration in the laboratory using a 5 µm filter will provide useful information regarding PAH association with clay size particles.

3. **DEQ Comment:** Geosyntec discusses preliminary findings indicating that storm water solids from Basin M were coarser than from Basin L. Furthermore, DEQ notes that a portion of Basin M received PAH-contaminated soils in the past. Has the potential for contribution of PAHs from near-surface soils in this area during periods of overland flow (i.e., when the infiltration capacity is exceeded) been considered?

Port Response: Yes, the potential contribution of PAHs from surface soils has been considered, but this study and previous studies at T4 do not provide any indication that PAH contributions from the saturated pervious areas near the outfall are any higher than other areas of Basin M. The remedial investigation for T4 (Ash Creek / Newfields, 2007) found that PAHs in surface soils were detected intermittently in soil at generally low concentrations in both Basins L and M, which indicates PAHs are highly dispersed across the facility. Also, the coarser stormwater solids observed in Basin M does not provide any indication of PAH sources. In fact, Basin M had lower PAH solids concentrations than Basin L, indicating that PAHs may be less associated with coarse solids than with fine solids. The additional data collected as part of this study will further characterize the association of PAHs and stormwater solids.

EPA Response: Results presented in the Interim Report should be considered preliminary. The additional data collection being proposed by the Port will allow for better characterization of site stormwater solids and associated PAHs.

4. **DEQ Comment:** Figures 7 and 8 indicate that the majority of the cumulative flow in Basin M during both sampling intervals was due to one (1) relatively short period of clustered rain events, with the effect most pronounced during the second interval. DEQ concurs that data obtained from Basin M during the second sampling interval may not be representative and should be considered with caution.

Port Response: Agreed, the data obtained from Basin M during the second sampling interval will be considered with caution.

EPA Response: All data presented in the Interim Report should be considered with caution due to the reasons noted by DEQ and the lack of paired raw and treated stormwater results. EPA is also concerned that pollutant compositions may be altered during the long lengths of time between precipitation events. The Port and Geosyntec should consider collecting Quality Control (QC) samples to determine the impact of this sampling approach and reduce data uncertainties.

5. **DEQ Comment:** Weather permitting, DEQ concurs with the recommendations to repeat the

approved work plan and collect an additional round of representative storm water samples, with consideration of the above comments. DEQ shares the hope of Geosyntec and the Port that a more robust data set will allow conclusions about appropriate source control measures to be made.

Port Response: The above comments have been considered and the Work Plan activities have been reinitiated.

EPA Response: EPA concurs that repeating the entire Work Plan and collecting the same number of samples originally proposed during the 2015/2016 season is the best approach for determining proper SCM selection and design. The EPA Responses presented herein should also be considered as the Work Plan is reinitiated.